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Continental

MANUFACTURING FACILITY

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7006 2760 0002 7522 1324
Return Receipt Requested

081803AAB
12070023

July 9, 2012

Mr. Edwin C. Bakowski, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Division of Air Pollution Control
1021 North Grand Avenue East
Springfield, IL 62794

RECEIVED
STATE OF ILLINOIS
JUL 12 2012
Environmental Protection Agency
BUREAU OF AIR

RE: CTTA Construction Permit Application for Additional Mixing Capacity
Mt. Vernon, IL (Source ID 081803AAB)

Dear Mr. Bakowski:

Continental Tire the Americas, LLC (CTTA) operates a tire manufacturing facility located in Mt. Vernon, Illinois (Jefferson County). CTTA is classified as a major source pursuant to both New Source Review (NSR) permitting and Title V of the Clean Air Act and was issued a Clean Air Act Permit Program (CAAPP) operating permit on May 28, 2002 (Application No.: 95110095). A renewal application has been submitted to the Illinois Environmental Protection Agency (IEPA); however CTTA has not yet been issued a renewed CAAPP permit. With this application CTTA is proposing an addition to the mixing area of the Mt. Vernon plant. This application includes all proposed new and modified equipment associated with the proposed mixing area upgrade.

CTTA plans to add additional mixing capability to the Mt. Vernon facility's mixing area to accommodate market demand for new compound technologies for the Commercial Vehicle Tire (CVT) business unit. As such, the mixing capacity for the mixing area will need to be upgraded to allow for additional mixing passes for the new CVT compounds prior to the productive rubber stage. The new compound technologies require additional mixing time, or passes through the mixer; therefore, to maintain current production additional mixing capacity must be added. Also, the additional mixing capacity will allow for more downtime and maintenance for the existing mixers at the Mt. Vernon plant. The additional mixing capacity will be realized by adding two new mixers, Mixers 20 and 21, and by modifying an existing mixer, Mixer 5, to allow for increased capacity. The two new mixers will also include associated twin screw roller dies, while the modified mixer will replace the existing drop mill with a twin screw roller die. Also included in this application are 12 carbon black day bins which will service the new mixers.

The proposed modifications to the Mt. Vernon facility trigger the need for air quality construction permitting. This submittal has been prepared in order to apply for an IEPA construction permit. It should be noted that this project does not trigger federal New Source Review (NSR), as demonstrated in the body of this application. Please find included two complete copies of the construction permit application for the mixing area project. An amount of $10,000 to cover the fee for this permit application, as determined per the 197-FEE form and instructions, is being processed for direct deposit. The required IEPA forms, including the 197-FEE form, are included in Attachment 1. In addition, CTTA requests that a statement granting permission to operate the

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Mt. Vernon, Illinois 62864-0022

affected equipment under the requested construction permit until the CAAPP permit is revised be included in the construction permit for this project.

PROCESS DESCRIPTION

The processes included in this construction permit application are described below. A process flow diagram of all units addressed in this construction permit application is included in Attachment 2.

Rubber Mixing and Milling

Mixing at CTTA is conducted in devices known as Banbury mixers. A Banbury mixer is a large internal batch mixer that consists of a mixing chamber and spiral-lobed rotors that knead the raw materials into a homogeneous mass of rubber compound. Raw materials may include carbon black, process oils, natural rubber, synthetic rubber, curing agent, silica, and coupling agent.

The mixing area produces non-productive and productive rubber. Non-productive rubber is obtained from the initial stages of mixing where the main raw materials are combined, but curing agents have not yet been added. Productive rubber is obtained from the final stage of mixing when the curing agents are introduced into the rubber compound prior to transport to the calendering/extruding department. This project is needed because compound technology has changed in such a way that more non-productive passes are needed to create the same amount of productive rubber. The actual amount of productive rubber created in the CVT area is not increasing, therefore, no upstream or downstream processes should see increased emissions. In addition, since the number of tires produced in the PLT area will not increase as a result of this project and other mixers will see additional downtime based on the addition of the new mixers, it is not anticipated that upstream or downstream processes will see an increase emissions due to this project.

The raw materials are introduced into the mixer in a sequential manner at an elevated temperature. Once the ingredients are mixed, the batch is then released onto a drop device (mill, roller die, etc.) where it is formed into sheets. The sheets of hot rubber are processed through an anti-tack solution, cooled, and placed onto pallets for storage and transport. Volatile Organic Material (VOM) and particulate matter (PM) emissions occur during the mixing process while only VOM emissions occur during the milling through the twin screw roller dies. Emissions from each mixer are exhausted through a baghouse located on the roof above the mixer. The small amount of VOM emissions from the mills is typically vented inside the building, however, for the new twin screw roller die mills serving Mixers 5, 20 and 21 the emissions will be vented to the respective mixer baghouse which vent to existing regenerative thermal oxidizers (RTOs). Mixer 5 emissions will vent to the RTO that currently controls Mixer 6 and Mixers 20 and 21 will vent to the RTO that currently controls Mixer 19 and tread end cementing.

Carbon Black Day Bins

Carbon black is delivered to the CTTA facility via truck or railcar. The carbon black is unloaded in a carbon barn and then ultimately transferred to a carbon silo for storage prior to use. When called for by the process, the carbon black is pneumatically transferred from the silo to a day bin in the rubber mixing department. PM is emitted during the handling of carbon black. All of the carbon black handling operations through the new day bins are controlled by the baghouses controlling emissions from Mixers 20 and 21. Because the overall amount of productive rubber will not be increased the carbon black handling prior to the day bins will not be affected.

EMISSIONS INVENTORY

The proposed mixer project will emit VOM, PM including PM with an aerodynamic diameter of 10 microns or less (PM_{10}) and PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), hazardous air pollutants (HAPs), nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), and greenhouse gases (GHGs).

The potential to emit (PTE) of VOM emitting units was calculated based on either stack test data (mixers) or using AP-42 (twin screw roller dies, estimated as drop mills). The referenced stack test was conducted on four of CTTA's Banbury mixers on April 28-29, 2010 by Conestoga-Rovers & Associates.[1] This stack test included testing on the largest Banbury mixers, mixing the recipes which are expected to yield the highest VOM emissions for conventional rubber or silica rubber. The drop mills were calculated using the worst-case emission factors for milling compounds #1-6 from AP-42 Section 4.12, Table 4.12-4.

The PTE of $PM/PM_{10}/PM_{2.5}$ emitting units was calculated based on either stack test data from the CTTA plant in Charlotte, North Carolina (CTTA-Charlotte) for the mixers or use of an outlet grain loading guarantee from the manufacturer for the carbon black day bins. The CTTA-Charlotte facility conducted stack tests in early 2005 on mixers with dust collection equipment similar to those to be installed at the CTTA facility in Mt. Vernon. The stack testing consisted of both Method 17 for the determination of in-stack particulate matter emissions and Method 202 for the determination of condensable particulate matter. The stack testing at CTTA-Charlotte was performed on emission sources considered to be representative of plant emissions for the purpose of providing data for the facility's Title V Permit renewal. For this reason, CTTA's Mt. Vernon facility has added an additional safety factor to the $PM_{10}/PM_{2.5}$ emission factors for the mixers to represent the worst-case production scenarios that might be encountered at CTTA in Mt. Vernon.

The PTE of the remaining pollutants was calculated based on emissions from the RTO burner. The emission factors for the criteria pollutants from the RTO burner were obtained from AP-42 Tables 1.4-1 and 1.4-2. The emission factors for HAPs from the RTO burner were obtained from AP-42 Tables 1.4-3 and 1.4-4. The emission factors for GHGs from the RTO burner come from 40 CFR Part 98 Subpart C, Tables C-1 and C-2. Table 1 summarizes the emissions for the project and compares the emissions against the Prevention of Deterioration (PSD) Significant Emissions Rate (SER) thresholds.[2] For detailed calculations, please refer to Attachment 3.

Table 1. Project Potential Emissions

Pollutant	Project Potential Emissions (tons per year)	Significant Emission Rate Threshold (tons per year)
NO_X	6.42	40
CO	5.39	100
PM_{10}	1.27	15
$PM_{2.5}$	1.27	10
SO_2	0.04	40
VOM	37.00	40
Total HAPs	3.93	N/A
GHGs	7,664	75,000

[1] Stack Test Report was delivered to the IEPA Bureau of Air via certified mail on July 9, 2010.
[2] Jefferson County is currently attainment for all pollutants; therefore, the potential emissions from the project were compared to PSD thresholds.

REGULATORY REVIEW

Determinations with regard to applicability of certain federal and Illinois air quality regulations are summarized below.

Standards of Performance for New Stationary Sources

One potentially applicable regulation is Subpart BBB, Standards of Performance for the Rubber Tire Manufacturing Industry. However, the new and modified mixers, twin screw roller dies, and carbon black day bins are not subject to NSPS Subpart BBB as they are not listed as covered operations under the subpart.

National Emission Standards for Hazardous Air Pollutants

CTTA is a major source of HAPs. There is one rubber tire manufacturing-specific major source NESHAP to which CTTA is subject, namely 40 CFR Part 63 Subpart XXXX – *National Emission Standards for Hazardous Air Pollutants for Rubber Tire Manufacturing*. According to 40 CFR 63.5982(b)(4), the rubber processing affected source, which includes all rubber mixing and associated milling, has no emission limitations or other requirements. Therefore, CTTA's two new mixers will not be subject to emission limitations or other requirements under this rule. The remaining carbon black day bins are not subject to the provisions of this rule as they are not considered part of the tire production affected source, since they do not use process cements or solvents. [63.5982(b)(1)].

State of Illinois Air Pollution Regulations

35 IAC 212 Subpart B

The mixers and carbon black day bins are subject to 35 IAC 212.123 (Subpart B), which prohibits emission of smoke or other PM with an opacity greater than 30 percent. The opacity of smoke or other PM may be greater than 30 percent but not greater than 60 percent for periods aggregating eight minutes in any 60 minute period as outlined in 35 IAC 212.123(b).

35 IAC 212 Subpart L

The mixers and carbon black day bins are subject to 35 IAC 212.322 (Subpart L), which limits allowable emissions of PM based on a calculated process weight rate (PWR). Compliance with the applicable PWRs is demonstrated in the applicable IEPA forms in Attachment 1.

35 IAC 215 Subpart K

All units that emit organic material as defined by 35 IAC 211.4250(b) are subject to 35 IAC 215.301 (Subpart K), which limits that amount of organic material discharged from any emission source. According to this rule, the amount of organic material discharged from any emission source cannot exceed 3.6 kg/hr (8 lbs/hr), except as provided in Sections 215.302, 215.303, and 215.304. Pursuant to 35 IAC 215.302(a), the emissions from the regenerative thermal oxidizers (RTOs) are allowed to exceed 8 lbs/hr if the emissions are reduced to 10 ppm equivalent methane or less, or to convert 85 percent of the hydrocarbons to carbon dioxide and water. The RTOs control hydrocarbon emissions by more than 85 percent or to less than 10 ppm, as guaranteed by the vendor.

DISCUSSION REGARDING SEPARATION OF RECENT PROJECTS

CTTA submitted a permit application and received a permit from IEPA for a PLT expansion project on May 1, 2011. Based on the fact that the current mixer project application is being submitted within 18 months of the previous project, CTTA considers it prudent to include a discussion as to why the current mixer project and the previous PLT expansion project should be considered separately with respect to permitting. The PLT expansion project that is currently in the construction and startup phase at the Mt. Vernon facility and the proposed mixer capacity upgrade project are not substantially related based on the fact the mixer project will not actually increase the total rubber production from the mixing department or the number of tires produced at the facility. The upgrades are required in order to allow recipe changes to the CVT tires based on new customer demands related to tire performance. In addition, the project will allow additional downtime and maintenance-related activities for existing mixers within the mixing department. Also, the two projects are not technically or economically related because either project could be completed without the need to complete the other project. The benefit to the facility of either project is not significantly reduced without the other. For these reasons, CTTA believes that the two projects should be permitted separately. Please see Attachment 4 for additional details.

****

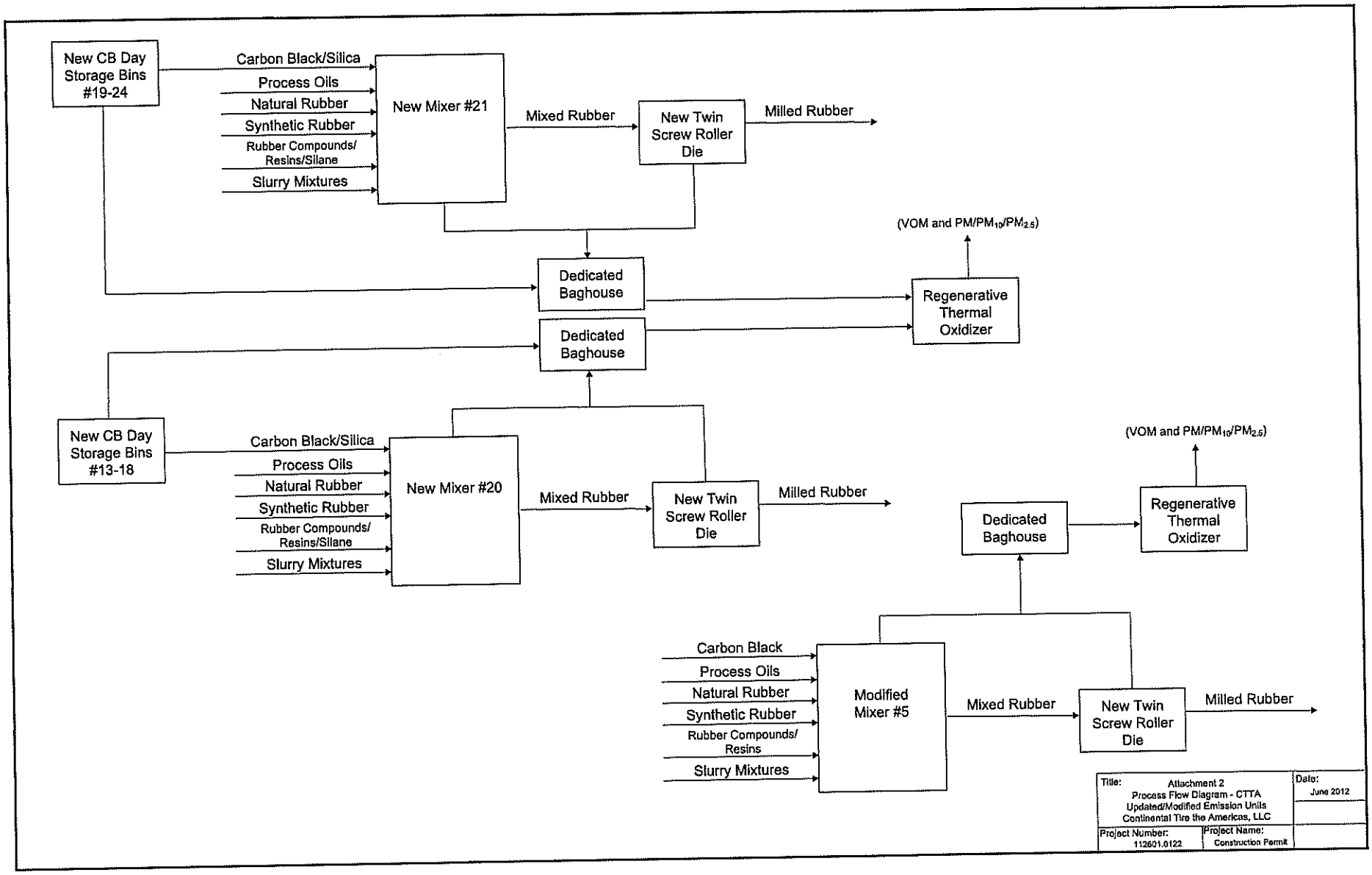
CTTA appreciates the IEPA's timely review of this application and issuance of the construction permit for the expansion project. If you have any questions or comments about the information presented in this letter, please do not hesitate to call me at (618) 246-2407, Scott Cravens, ESH Manager, at (618) 246-2882 or Lawrence Miles, Environmental Manager, at (618) 246-2450.

Sincerely,

CONTINENTAL TIRE THE AMERICAS, LLC

Benjamin G. Harmse
Vice President of Manufacturing

Attachments


New CB Day Storage Bins #19-24
Carbon Black/Silica
Process Oils
Natural Rubber
Synthetic Rubber
Rubber Compounds/ Resins/Silane
Slurry Mixtures
New Mixer #21
Mixed Rubber
New Twin Screw Roller Die
Milled Rubber
(VOM and PM/PM10/PM2.5)
Dedicated Baghouse
Regenerative Thermal Oxidizer
Dedicated Baghouse
New CB Day Storage Bins #13-18
Carbon Black/Silica
Process Oils
Natural Rubber
Synthetic Rubber
Rubber Compounds/ Resins/Silane
Slurry Mixtures
New Mixer #20
Mixed Rubber
New Twin Screw Roller Die
Milled Rubber
(VOM and PM/PM10/PM2.5)
Dedicated Baghouse
Regenerative Thermal Oxidizer
Carbon Black
Process Oils
Natural Rubber
Synthetic Rubber
Rubber Compounds/ Resins
Slurry Mixtures
Modified Mixer #5
Mixed Rubber
New Twin Screw Roller Die
Milled Rubber
Title: Attachment 2 Process Flow Diagram - CTTA Updated/Modified Emission Units Continental Tire the Americas, LLC
Date: June 2012
Project Number: 112601.0122
Project Name: Construction Permit

CTTA Emissions Summary

Pollutant	Project Potential Emissions (lb/hr)	Project Potential Emissions (tons per year)
NO_x	1.47	6.42
CO	1.23	5.39
PM_{10}	0.29	1.27
$PM_{2.5}$	0.29	1.27
SO_2	0.01	0.04
VOM	9.61	37.00
Total HAPs	1.05	3.93
GHGs	1,750	7,664

CTTA New and Modified VOM Emissions

Uncontrolled VOM Equations:
Uncontrolled VOM Emission Rate, lbs/hr = Amt of Rubber Processed x Emission Factor, lbs/hr
Uncontrolled VOM Emission Rate, tpy = (Uncontrolled VOM Emission Rate, lbs/hr) x (Operating Hours) / (2000 lbs/ton)

Emission Source ID	Emission Source Description	Potential Annual Throughput	Units	Potential Operating Hours (hrs/yr)	2007/2008 Past Actual Emissions (lb/hr)	2007/2008 Past Actual Emissions (tpy)	Future Potential Uncontrolled Emissions (lb/hr)	Future Potential Uncontrolled Emissions (tpy)	Increase in Uncontrolled VOM Emission Rate (g/s)	Increase in Uncontrolled VOM Emissions (lb/hr)	Increase in Uncontrolled VOM Emissions (tpy)	Increase in Controlled VOM Emissions (lb/hr)	Increase in Controlled VOM Emissions (tpy)	Control Device	Capture Efficiency (CPE)	Control Efficiency[1] (CE)
ES299	New Mixer 20[2]	84,150,000	lbs rubber/yr	7,500	-	-	20.90	78.38	2.64	20.90	78.38	4.68	17.55	Regenerative Thermal Oxider	100%	99%
ES302	New Mixer 21[2]	75,900,000	lbs rubber/yr	7,500	-	-	18.85	70.69	2.38	18.85	70.69	4.22	15.83	Regenerative Thermal Oxider	100%	99%
ES301	New Twin Screw Roller Die Unit #20[3]	84,150,000	lbs rubber/yr	7,500	-	-	1.27	4.75	0.16	1.27	4.75	0.28	1.06	Regenerative Thermal Oxider	100%	99%
ES303	New Twin Screw Roller Die Unit #21[3]	75,900,000	lbs rubber/yr	7,500	-	-	1.14	4.29	0.14	1.14	4.29	0.26	0.96	Regenerative Thermal Oxider	100%	99%
ES12/ES19	Modified Mixer 5 Upgrade and Roller Die[4]	112,200,000	lbs rubber/yr	7,500	1.11	3.21	2.07	7.77	0.12	0.96	4.56	0.17	1.61	Regenerative Thermal Oxider	100%	98%
					Totals (tpy):	**3.21**		**165.88**	**5.44**		**162.68**		**37.00**			

Notes:
[1] Control efficiency shown is based on mfr guarantee, calculations for emissions from the RTO controlled processes are shown on the RTO-Controlled VOM spreadsheet.
[2] VOM emissions for each unit from Mixers #20 #21 RTO are calculated using a ratio based on pre-controlled emissions.
[3] Twin Screw Roller Dies are modeled as drop mills not extruders
[4] 2007 & 2008 actuals for Mixer #5 have been adjusted based on the actual throughput using the emission factors from the Mt Vernon stack test data.

CTTA RTO-Controlled VOM Emissions

Unit	Flow Rate (dscfm)	Operating Hours	Inlet VOM (ppmvd)	Outlet VOM (ppmvd as propane)	Conversion of RM25a as propane to VOM as carbon		Midwest Scaling Protocol Adjustments[1]		
					ppmvd	Emission Rate (lb/hr)	ppmvd	Emission Rate (lb/hr)	Emission Rate (tpy)
New Mixer 20/21 & Roller Dies[2]	36,000	7,500	231	4.9	14.7	3.63	38.22	9.44	35.4
Modified Mixer 5 & Roller Die[3]	12,000	7,500	3.33	2	6	0.49	15.6	1.28	4.8
							Totals (tpy):	**10.7**	**40.2**

Notes:

[1] Conservatively use highest expected scaling factor of 2.6 from Midwest Scaling Protocol for Measurement of VOC Mass Emissions

[2] Emissions from Mixers 20/21 and their associated Twin Screw Roller Dies will be routed to the same RTO as Mixer 19 and its Drop Mill and the Tread End Cementer

[3] Emissions from Mixer 5 and its associated Roller Die will be routed to the same RTO as Mixer 6 and its Drop Mill

CTTA New and Modified $PM/PM_{10}/PM_{2.5}$ Emissions

Uncontrolled $PM/PM_{10}/PM_{2.5}$ Equations:
Uncontrolled PM and PM_{10} Emission Rate, lbs/hr = Amt of Rubber Processed x Emission Factor, lbs/hr
Uncontrolled PM and PM_{10} Emission Rate, tpy = (Uncontrolled PM and PM_{10} Emission Rate, lbs/hr) x (Operating Hours) / (2000 lbs/ton)

Controlled $PM/PM_{10}/PM_{2.5}$ Equations:
Controlled PM and PM_{10} Emission Rate, lbs/hr = (Uncontrolled PM and PM_{10} Emission Rate, lbs/hr) x (1-CPE*CE)
Controlled PM and PM_{10} Emission Rate, tpy = (Controlled PM and PM_{10} Emission Rate, lbs/hr) x (Operating Hours) / (2000 lbs/ton)

Emission Source ID	Emission Source Description	Potential Annual Throughput	Units	Potential Operating Hours (hrs/yr)	2003/2004 Past Actual Emissions (lb/hr)	2003/2004 Past Actual Emissions (tpy)	Future Potential Uncontrolled Emissions (lb/hr)	Future Potential Uncontrolled Emissions (tpy)	Increase in Uncontrolled $PM/PM_{10}/PM_{2.5}$ Emission Rate (g/s)	Increase in Uncontrolled $PM/PM_{10}/PM_{2.5}$ Emissions (lb/hr)	Increase in Uncontrolled $PM/PM_{10}/PM_{2.5}$ Emissions (tpy)	Increase in Controlled $PM/PM_{10}/PM_{2.5}$ Emissions (lb/hr)	Increase in Controlled $PM/PM_{10}/PM_{2.5}$ Emissions (tpy)	Control Device	Capture Efficiency (CPE)	Control Efficiency (CE)
ES299	New Mixer 20	84,150,000	lbs rubber/yr	7,500	-	-	0.31	1.15	0.04	0.31	1.15	3.06E-03	1.15E-02	Baghouse	100%	99.0%
ES302	New Mixer 21	75,900,000	lbs rubber/yr	7,500	-	-	0.28	1.04	0.03	0.28	1.04	2.76E-03	1.04E-02	Baghouse	100%	99.0%
ES304-309	New Day Storage Bins #13-18	21,900,000	lbs carbon black/yr	8,760	-	-	8.57	37.54	1.08	8.57	37.54	0.09	0.38	Baghouse	100%	99.0%
ES310-315	New Day Storage Bins #19-24	21,900,000	lbs carbon black/yr	8,760	-	-	8.57	37.54	1.08	8.57	37.54	0.09	0.38	Baghouse	100%	99.0%
ES12/ES19	Modified Mixer 5 Upgrade[2] and Roller Die	112,200,000	lbs rubber/yr	7,500	0.22	0.85	0.41	1.53	0.02	0.19	0.71	1.89E-03	7.10E-03	Baghouse	100%	99.0%
					Totals (tpy):	0.85		78.80	2.26		77.98		0.78			

Notes:
[1] Charlotte stack test emission factor was taken after the cyclone, thus the control was taken into account.
[2] 2003 & 2004 actuals for mixer #5 have been adjusted based on the actual throughput using the emission factors from the Charlotte stack test data

CTTA Control Equipment Emissions - RTO Burners

Regenerative Thermal Oxidizers for Mixer #20, #21 and #5 and Associated Roller Dies

Annual Hours of Operation:	8,760	hr/yr
Burner Capacity (Fuel Input):[1]	14.95	MMBtu/hr
	0.01	MMscf/hr
	128.43	MMscf/yr
	10.70	MMscf/mo
Fuel:	Natural Gas	
Natural Gas Heating Value:	1,020	MMBtu/MMscf
Mass Conversion:	2.20	Lbs/kg
GWP of CO_2:	1	lbs CO_2e/lb CO_2
GWP of N_2O:	310	lbs CO_2e/lb N_2O
GWP of CH_4:	21	lbs CO_2e/lb CH_4

RTO	Burner Capacity (MMBtu/hr)	Flow Rate (dscf)	Potential Flow Rate (dscf)	Potential Burner Capacity (MMBtu/hr)
19,20&21	4.8	22000	58000	12.655
5&6	2.3	24000	24000	2.300
		Total Burner Capacity		14.95

RTO Emissions

Pollutant	Natural Gas Emission Factor (lb/MMscf)	Potential Emissions (lb/hr)	Potential Emissions (lb/yr)	Potential Emissions (tpy)	Emission Factor Source
NO_X	100.0	1.47	12,843	6.42	AP-42, Table 1.4-1 (7/98)
CO	84	1.23	10,788	5.39	AP-42, Table 1.4-1 (7/98)
PM_{10}	7.6	0.11	976	0.49	AP-42, Table 1.4-2 (7/98)
$PM_{2.5}$	7.6	0.11	976	0.49	AP-42, Table 1.4-2 (7/98)
SO_2	0.60	0.01	77	0.04	AP-42, Table 1.4-2 (7/98)
VOM[2]	5.5	0.08	706	0.35	AP-42, Table 1.4-2 (7/98)
Total HAPs	1.89	0.03	242	0.12	AP-42, Tables 1.4-3 and 1.4-4 (7/98)
CO_2	119,227	1,748	15,312,683	7,656	40 CFR Part 98 Subpart C, Table C-1[3]
N_2O	0.22	0.00	29	0.01	40 CFR Part 98 Subpart C, Table C-2[4]
CH_4	2.25	0.03	289	0.14	40 CFR Part 98 Subpart C, Table C-2[5]
GHG (CO_2e)	-	1,749.74	15,327,702	7,664	40 CFR Part 98 Subpart A, Table A-1[6]

Notes:

[1] The RTO for Mixers #19, #20 and #21 currently uses one burner at 4.8 MMBtu/hr but will be increased by 12.66 MMBtu/hr. The RTO for Mixers #5 and #6 use one burner at 2.3 MMBtu/hr but will be increased by 2.3 MMBtu/hr.

[2] VOM emissions from natural gas burning are included in the emissions guarantee and as such are included in the ppm limit on the RTO-Controlled VOM spreadsheet

[3] Table C-1 provides emission factor as 53.02 kg/MMBtu, the factor was modified to lb/MMscf

[4] Table C-2 provides emission factor as 1.00E-04 kg/MMBtu, the factor was modified to lb/MMscf

[5] Table C-2 provides emission factor as 1.00E-03 kg/MMBtu, the factor was modified to lb/MMscf

[6] Table A-1 Provides global warming potentials for Greenhouse Gas pollutants over a 100-year time horizon

CTTA Carbon Black Source Emissions

Emission Source	Emission Data[1] (Grains/SCF)	(SCFM)	Before Control (lbs/hr)	Actual PM Emissions					
				Capture Eff. (%)	Control Eff. (%)	Hours	lbs/hr	lbs/yr	TPY
New Day Storage Bins #13-18	2	500	8.57	100%	99.0%	8,760	0.0857	750.9	0.38
New Day Storage Bins #19-24	2	500	8.57	100%	99.0%	8,760	0.0857	750.9	0.38

Notes:

[1] Only increase in carbon black from new day storage bins per email with Larry Miles on 5/02/2012

CTTA Equipment and Assumptions

Area	Item	Units	Existing Capacity	New Capacity	Units of Measure	Reference
Mixing & Receiving	Mixer 20	1	-	230,548	Lbs Rubber/Day	per email with Larry Miles (4/13/2012)
	Mixer 21	1	-	207,945	Lbs Rubber/Day	per email with Larry Miles (4/13/2012)
	Mixer 5 upgrade	1	192,480	307,397	Lbs Rubber/Day	per email with Larry Miles (4/13/2012)
	Carbon Black Day Storage Bin	12	-	60,000	Lbs Carbon Black/Day	per email with Larry Miles (4/13/2012)

Modified Mixer

Mixer #	Total Current Capacity (lbs/yr)[1]	2003 & 2004 Average Hours	2007 & 2008 Average Hours	Potential Hours	Average Actual 2003 & 2004 Throughput (lbs/yr)	Average Actual 2007 & 2008 Throughput (lbs/yr)	Total Capacity After Modification (lbs/yr)	Increase over 2003 & 2004	Increase over 2007 & 2008
5	70,255,200	7,784	5,776	8,760	62,427,680	46,319,510	112,200,000	49,772,320	65,880,490

EtOH Calculations

Weight % available EtOH/lb Coupling Agent[2]	15%	
Coupling Agent Weight % in compound	2.33%	
Pounds Silica Rubber	84,150,000	lbs/yr
Pounds Coupling Agent	1,960,695	lbs/yr
Total Theoretical EtOH Emissions	147.05	tpy
EtOH EF from Mixing	1.84E-03	lbs EtOH/lb rubber
EtOH Emissions from Mixing	77.32	tpy
EtOH Emissions from Curing	69.73	tpy
EtOH EF from Curing	1.66E-03	lbs EtOH/lb rubber
EtOH released in Mixing	52.6%	
EtOH released in Curing	47.4%	
Silica Rubber in Project	56.1%	
Non-Silica Rubber in Project	43.9%	

1. Mixer 5 PTE before modification from client supplied 2006 Title V Renewal spreadsheet [Copy of 2006 TV RENEWAL.xls]
2. Per conversation with L. Miles of CTTA on 12/3/2010

CTTA Emission Factors

Emission Factors			
Mixing	5.91E-05	lbs Total HAP/lb Rubber	Worst case AP-42 emission factor for mixing Cmpd #1-6 (Table 4.12-4)
	1.86E-03	lbs VOM/lb Rubber	Worst case emission factor from Stack Test for Silica Mixer, Banbury #14, 4/28/10
	1.38E-04	lbs VOM/lb Rubber	Worst case emission factor from Stack Test for Non-Silica Mixer, Banbury #6, 4/29/10
	2.73E-05	lbs PM/lb Rubber	Worst case emission factor from Charlotte stack test data
Chemical Weighing	3.58	lbs PM/hr	per 2009 AER, and 2006 CAAPP Renewal
Milling	1.13E-04	lbs VOM/lb Rubber	Worst case AP-42 emission factor for milling Cmpd #1-6 (Table 4.12-4)
	2.06E-05	lbs HAP/lb Rubber	Worst case AP-42 emission factor for milling Cmpd #1-6 (Table 4.12-4)
Calendering	1.70E-05	lbs VOM/lb Rubber	Emission factor is developed by taking the mixing emission factor times a ratio of 0.27 as calculated from data collected in the RMA Emission Factor Report, 1995
Extruding	1.23E-05	lbs VOM/lb Rubber	Worst case AP-42 emission factor for extruding Cmpd #1-6 (Table 4.12-4)
	3.11E-08	lbs PM/lb Rubber	Worst case AP-42 emission factor for extruding Cmpd #1-6 (Table 4.12-4)
	5.67E-06	lbs VOM/lb Rubber	Worst case AP-42 emission factor for extruding Cmpd #4 (Table 4.12-4)
	7.77E-09	lbs PM/lb Rubber	Worst case AP-42 emission factor for extruding Cmpd #6 (Table 4.12-4)
	3.52E-05	Total HAP/lb Rubber	Worst case AP-42 emission factor for extruding Cmpd #1-6 (Table 4.12-4)
Hex Bead Winder & Extruder	2.80E-05	lbs VOM/lb Rubber	Per fax with Keith 2/27/06, RMA Factor for Bead Extruding
	1.70E-04	lbs VOM/lb Rubber (Solvent)	Per fax with Keith 2/27/06
Curing	1.97E-03	lbs VOM/lb Rubber	Calculated emission factor for curing silica rubber (See "Assumptions" tab)
	3.10E-04	lbs VOM/lb Rubber	Worst case AP-42 emission factor for curing OEM 175/95 and Replacement 195/75 (Table 4.12-4)
	8.53E-05	lbs Total HAP/lb Rubber	Worst case AP-42 emission factor for curing OEM 175/95 and Replacement 195/75 (Table 4.12-4)
WSW Grinding/Buffing	1.59E-02	lbs VOM/lb Rubber Removed	AP-42 emission factor for WSW grinding (Table 4.12-4)
	1.62E-03	lbs PM/lb Rubber Removed	Emission factor for WSW buffer from Charlotte stack test data
TUO Grinding (Carcass)	5.21E-04	lbs VOM/lb Rubber Removed	AP-42 emission factor for carcass grinding (Table 4.12-4)
	1.27E-04	lbs Total HAP/lb Rubber Removed	AP-42 emission factor for carcass grinding (Table 4.12-4)
	1.56E-02	lbs PM/lb Rubber Removed	Worst case emission factor for TUO's from Charlotte stack test data
Repair Stations	1.52E-02	lbs VOM/lb Rubber Removed	per 2009 AER

USEPA Project Aggregation Policy Discussion

The following information is based on the Federal Register notice for Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Aggregation and Project Netting published in the Federal Register on January 15, 2009.1
Federal Register: http://www.epa.gov/nsr/fr/20090115_2376.pdf

Since the current permit application is being submitted just over one year after issuance of a separate construction permit (Permit No. 11010008) for the plant, CTTA considers it prudent to include a discussion as to why the current mixer project and the previous PLT expansion project should be considered separately with respect to permitting. This attachment includes a discussion of each of the points included in the Federal Register notice.

Substantial Relationship

Per the Federal Register notice taking final action on the US Environmental Protection Agency's (USEPA's) aggregation policy, the activities at a source should be aggregated when they are substantially related. To be "substantially related," there should be an apparent interconnection—either technically or economically—between the physical and/or operational changes, or a complementary relationship whereby a change at a plant may exist and operate independently, however its benefit is significantly reduced without the other activity. When there is no technical or economic relationship between activities or where the relationship is not substantial, their emissions need not be aggregated for NSR purposes. Furthermore, simply because a physical or operational change occurs at the same process unit as a previous change does not automatically establish a substantial relationship. The action explains that this is not the USEPA's interpretation of the NSR rules, and that a source's "overall basic purpose" is not a sufficient basis for determining that activities should be aggregated.

CTTA's PLT expansion project, permitted in May 2011, is currently in the construction/startup or operations phase at the Mt. Vernon facility. That project and the proposed mixer capacity upgrade project are not substantially related based on the fact the mixer project will not actually increase the total rubber production from the mixing department or the number of tires produced at the facility; therefore, it is not related to the PLT expansion project, which is being completed in order to increase the number of passenger and light truck tires produced at the Mt. Vernon plant. Rather, the mixing department upgrades are required in order to allow recipe changes to the tires produced in the CVT department, based on new customer demands related to heavy truck tire performance. In addition, the mixer capacity upgrade project will allow additional downtime and maintenance-related activities for existing mixers within the mixing department. Also, the two projects are not technically or economically related because they have separate funding sources, either project could be completed without the need to complete the other project and the benefit to the facility of either project is not significantly reduced without the other.

For these reasons, CTTA believes that the two projects should be permitted separately.

Timing of Activities

a. Closely-Timed Activities

As stated in the Federal Register notice – at times, timing of construction has been used, usually in conjunction with one or more other factors, by some permitting authorities as a basis for aggregating or disaggregating activities for NSR applicability. While the relative timing of two or more activities cannot

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1The notice contains final action from EPA only on the aggregation portion of the proposed rule and retains the current rule and interprets that rule text to mean that sources and permitting authorities should combine emissions when activities are "substantially related."

by itself be used to determine whether they have a technical or economic relationship, it is nevertheless an objective criterion that is simpler to apply than assessing the technical and/or economic interaction of the physical or operational changes. As such, it has some appeal, and may have even been used in some cases, as a surrogate for actually establishing a relationship that serves as a basis to aggregate activities. In the notice, USEPA explains that timing, in and of itself, is not determinative in a decision to aggregate activities. They do not believe that timing alone should be a basis for aggregation because it is inconsistent with the substantial technical and economic relationship policy discussed above. Aggregation based on timing alone could, in some cases, clearly result in aggregation of activities that have no technical or economic relationship whatsoever. There should be no presumption that activities automatically should be aggregated as a result of their proximity in time. Activities that happen to occur simultaneously at different units or large integrated manufacturing facilities do not necessarily have a substantial relationship. Even if they occur over a short period of time, multiple activities should be treated as a single project for NSR purposes only when a substantial technical or economic relationship exists among the changes.

Although, the two projects at CTTA are closely timed, as stated above the projects are neither technically nor economically related and, therefore should not be aggregated.